

Fig. 1 SPC Characterization methods

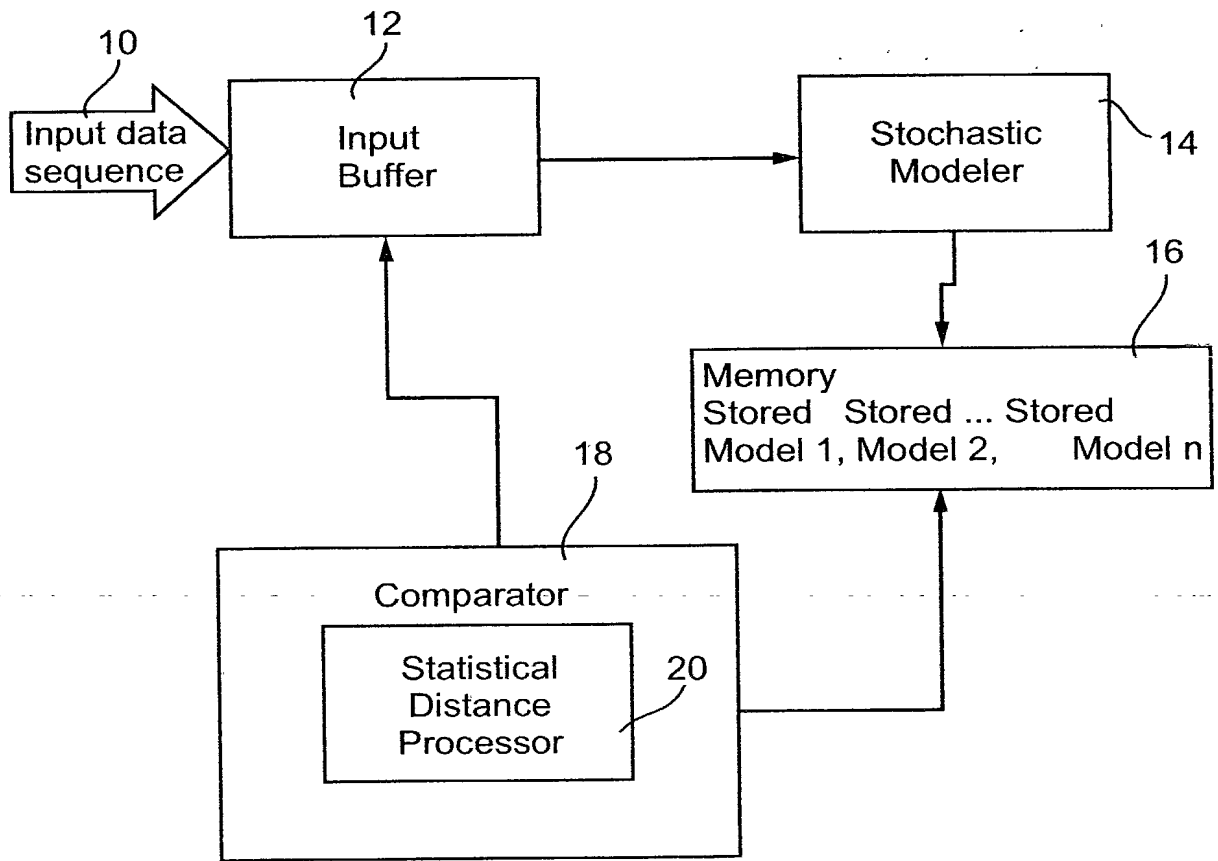


Fig. 2

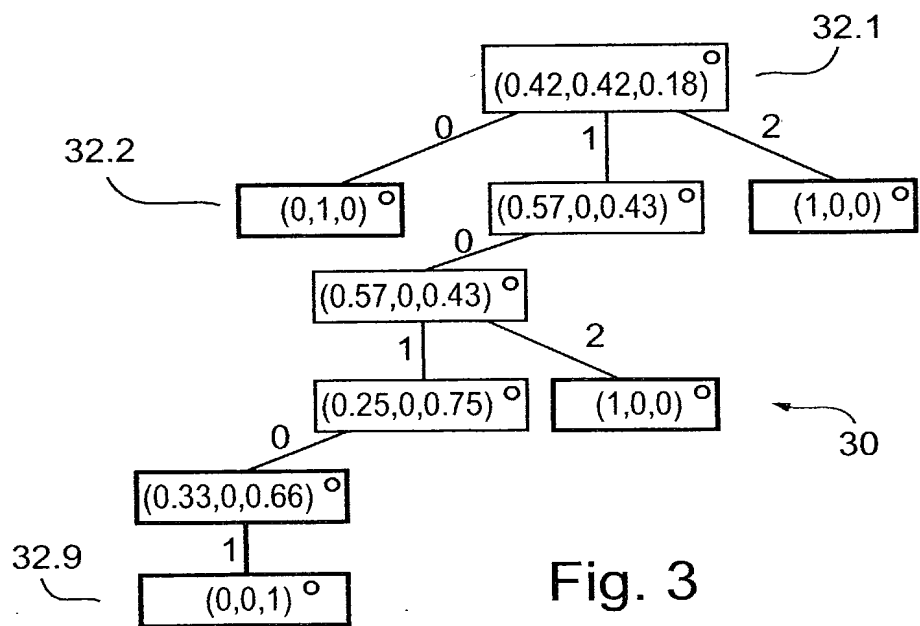


Fig. 3

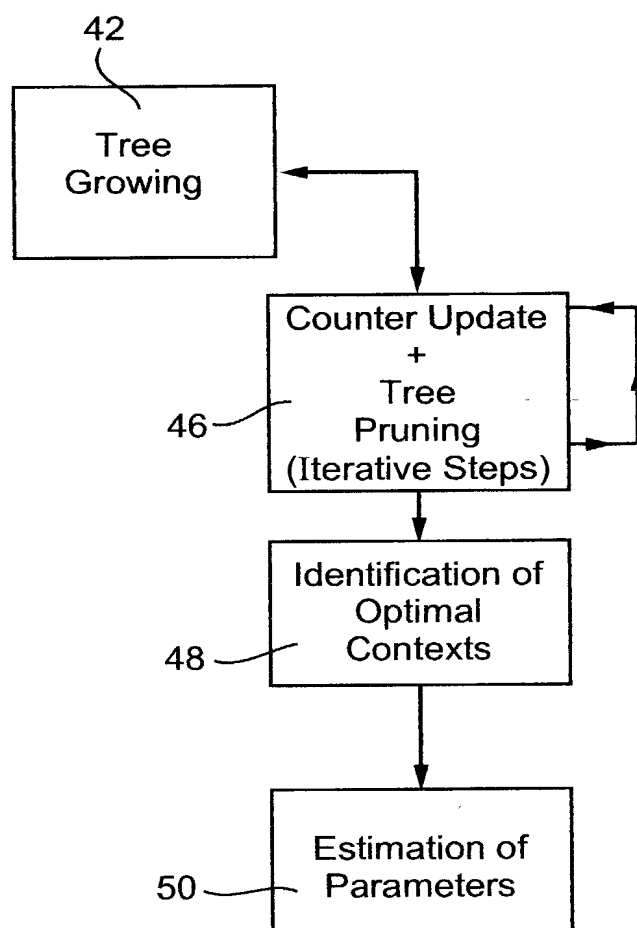


Fig. 4

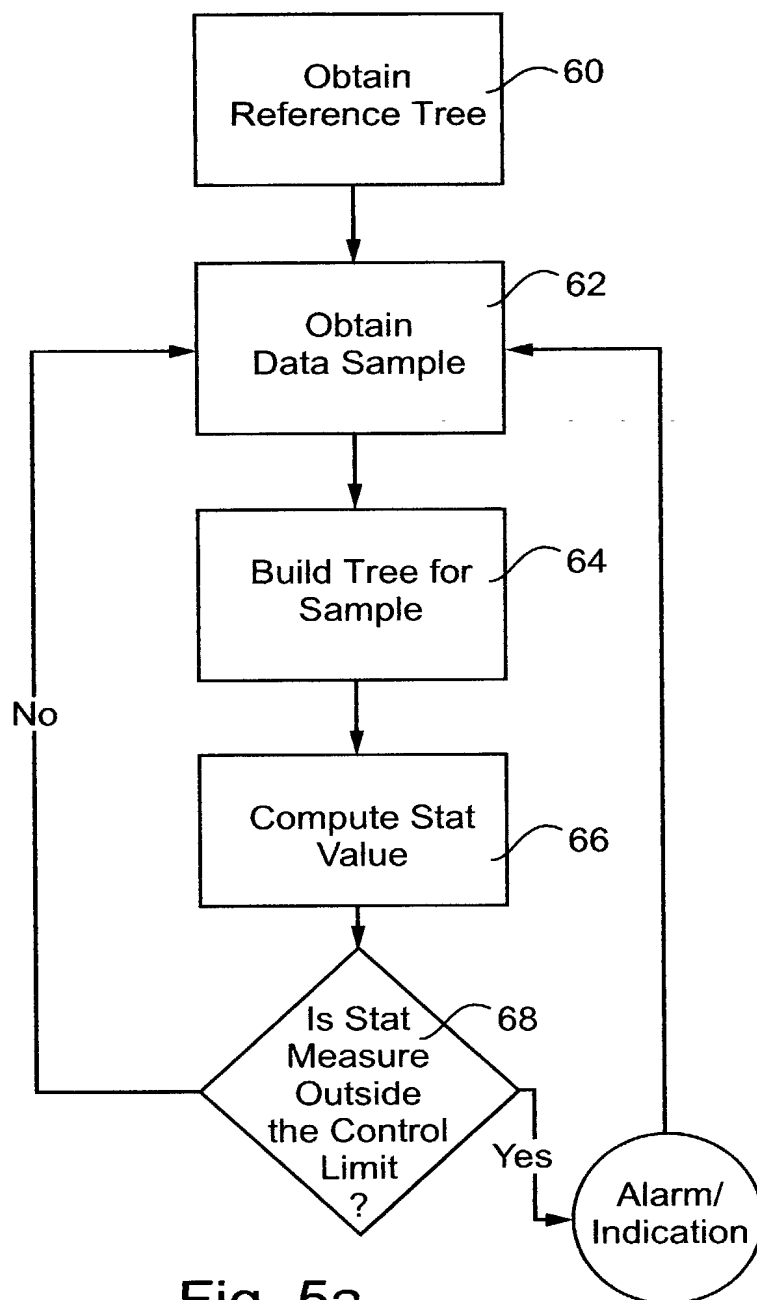


Fig. 5a

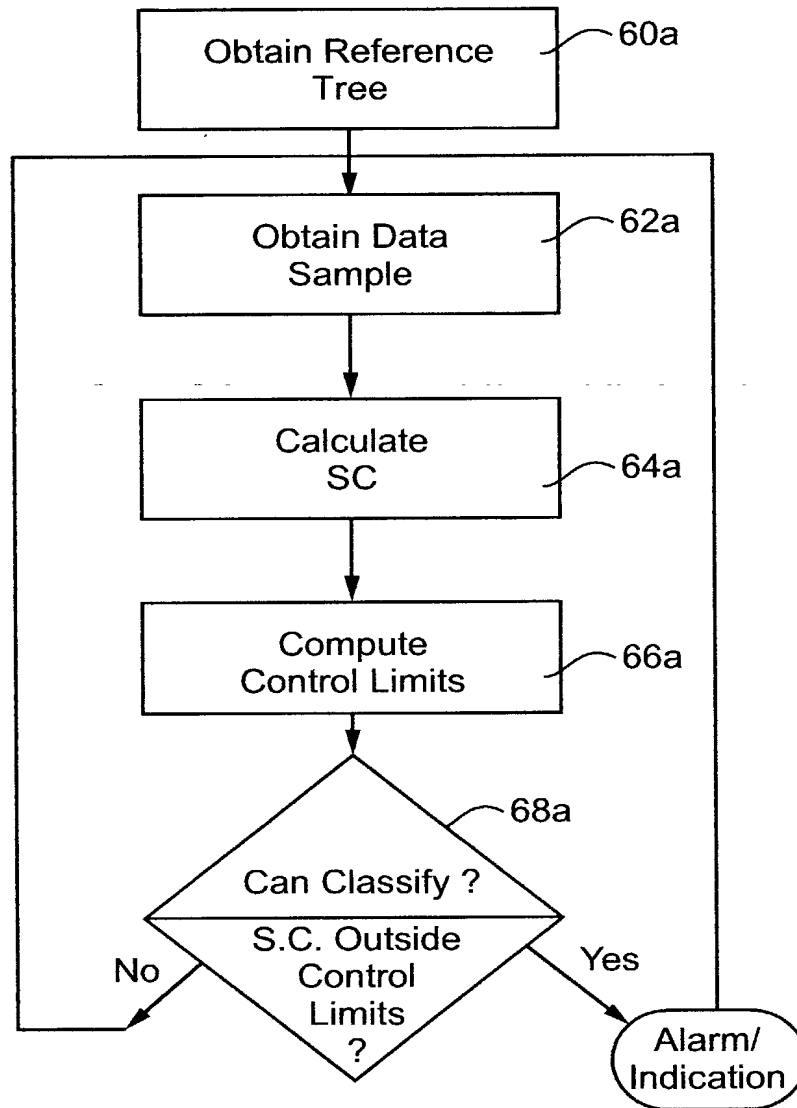


Fig. 5b

Fig. 6a

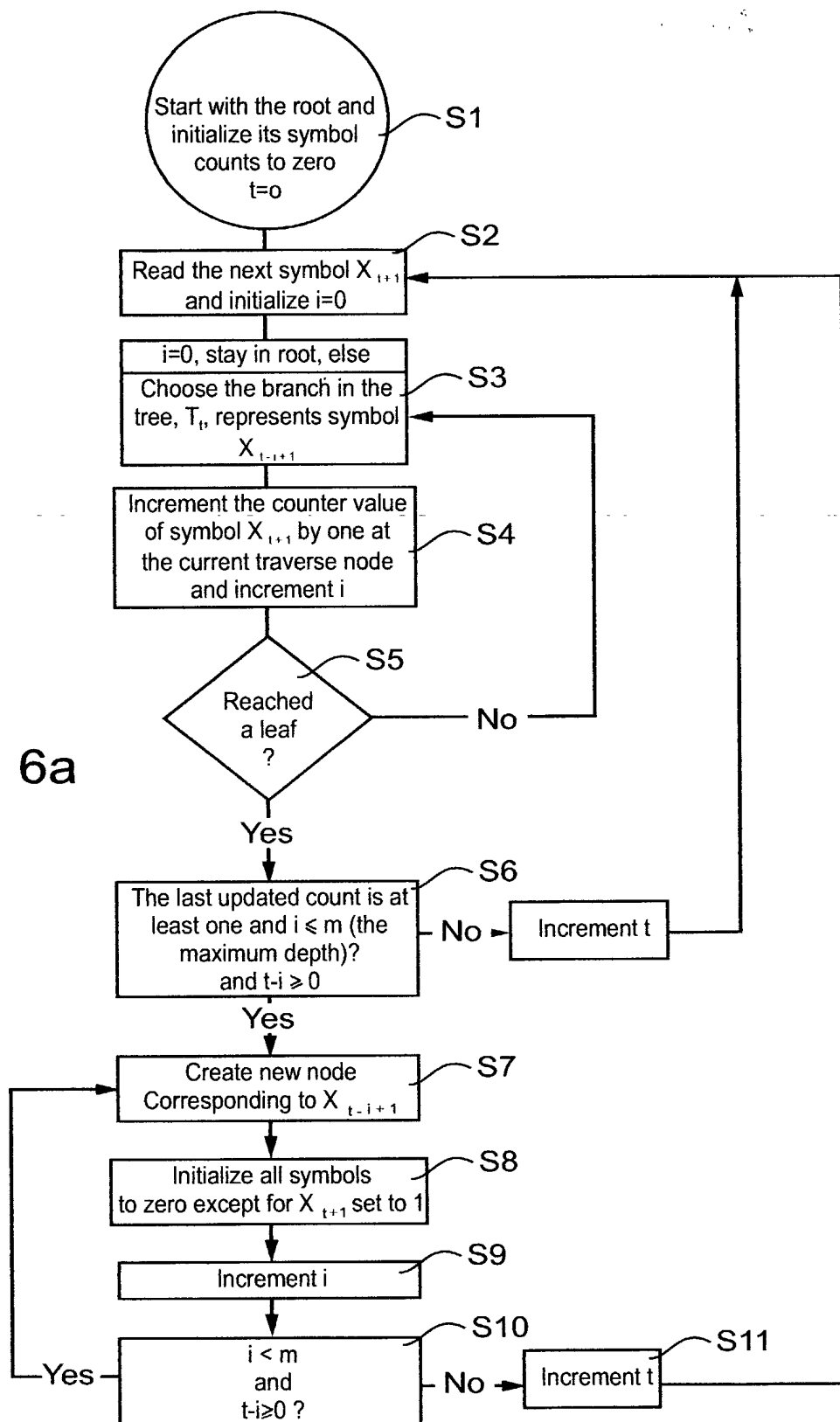
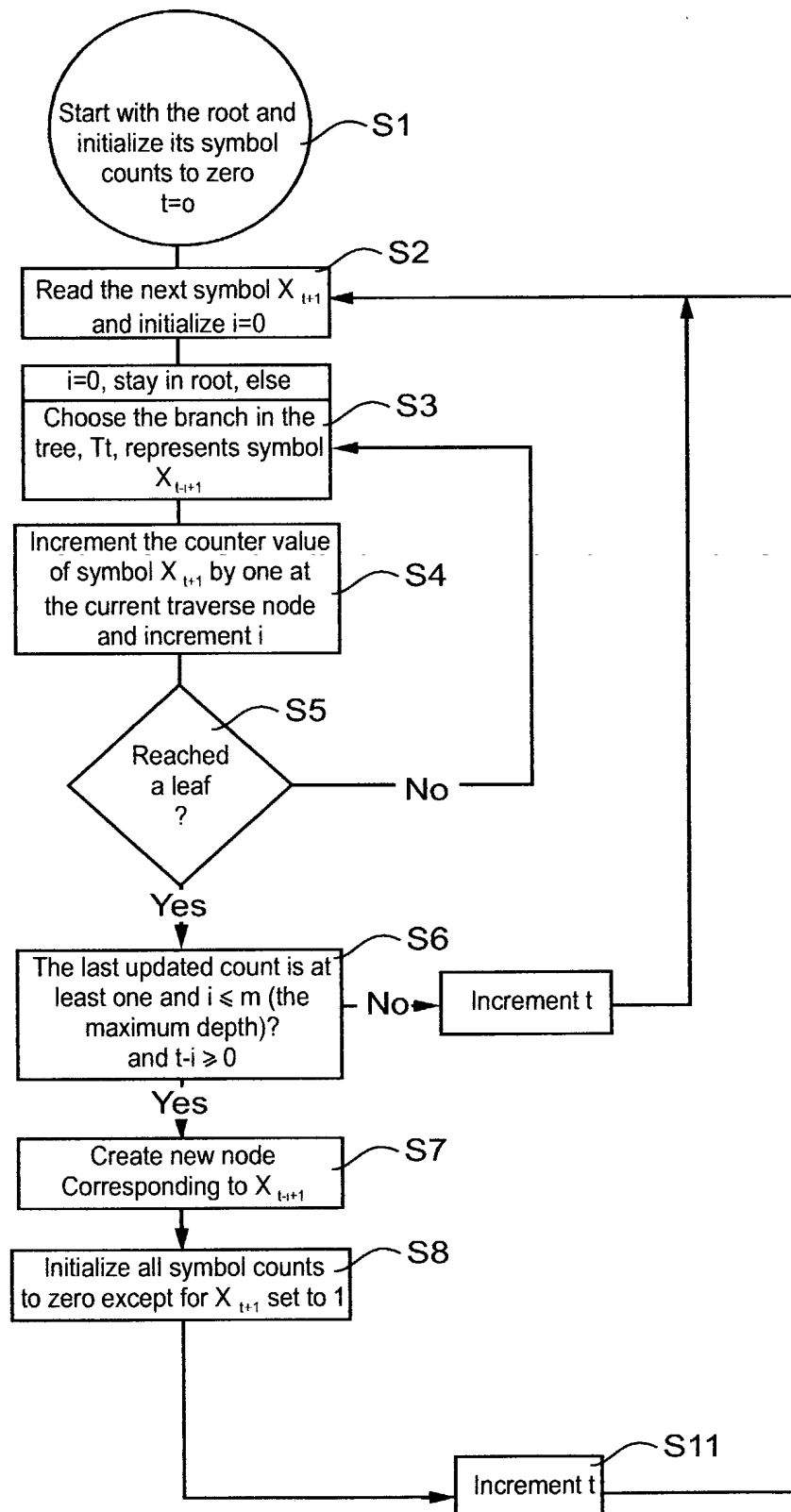
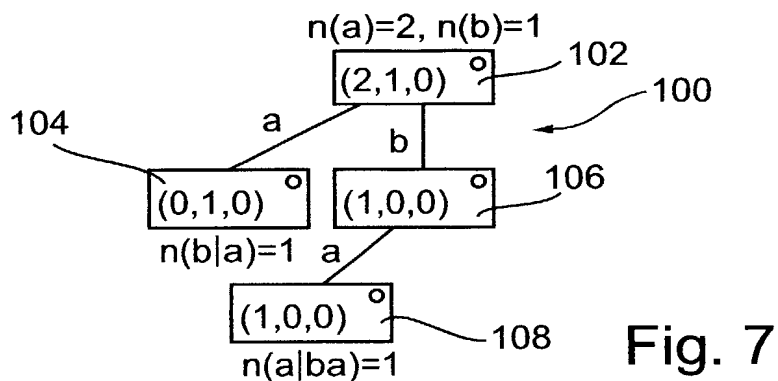
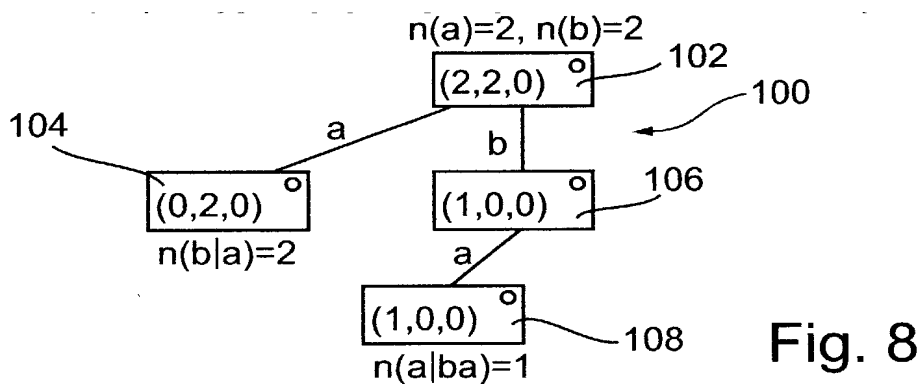


Fig. 6b

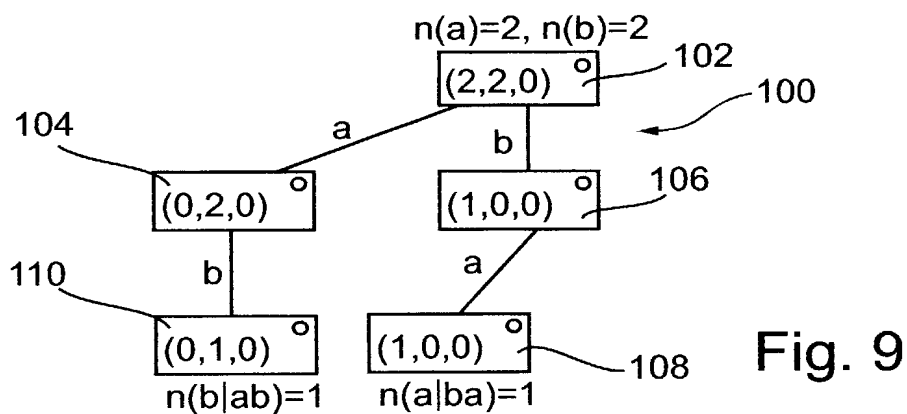




The counter context tree constructed from $x_3=a,b,a$



The counter context tree constructed from $x^4=a,b,a,b$ following step 1.1



The counter context tree constructed from $x^4=a,b,a,b$; partial application of step 1.2

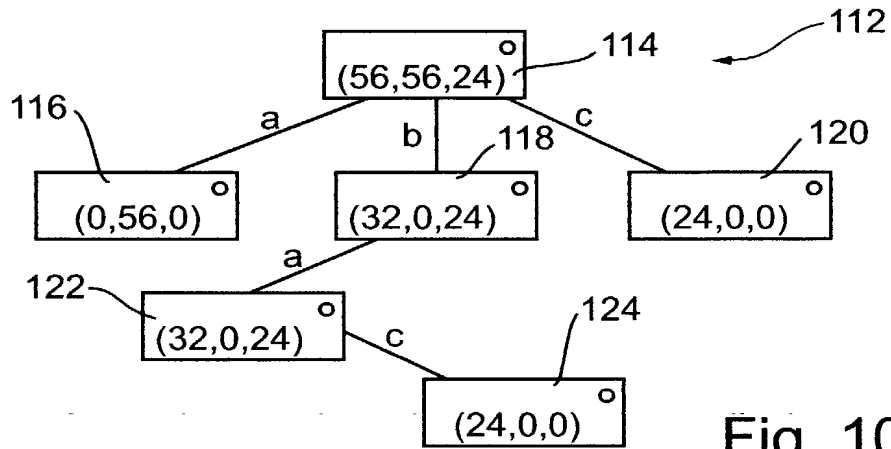


Fig. 10

The pruned counter context-tree of the string
 (a,b,a,b,c,a,b,a,b,c,a,b,a,b,a,b,c) replicated 8 times

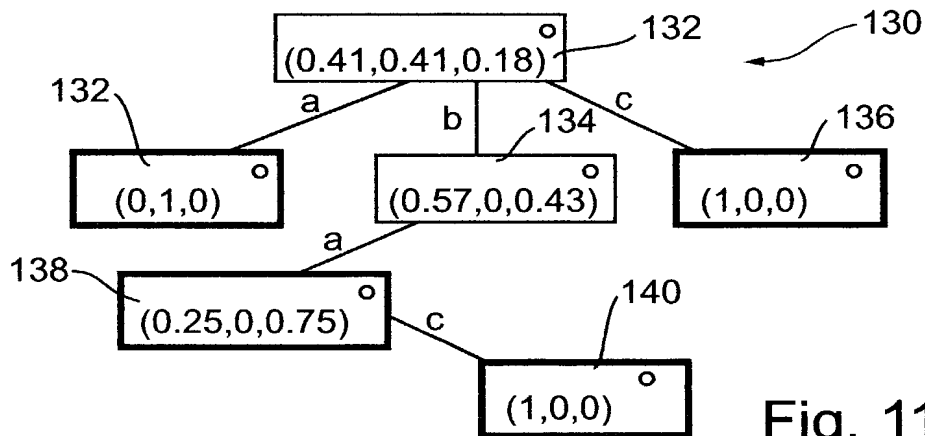


Fig. 11

The context tree containing vectors of conditional probabilities
 $P(x|s)$ as obtained from the counter context-tree in figure A4.
 Optimal contexts are represented by the bolded frame

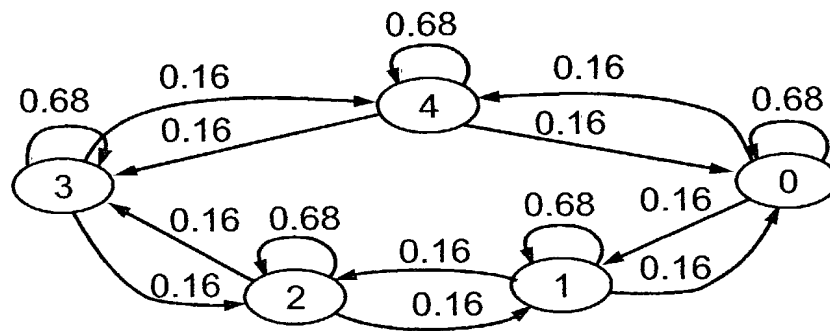


Fig. 12 State transition diagram

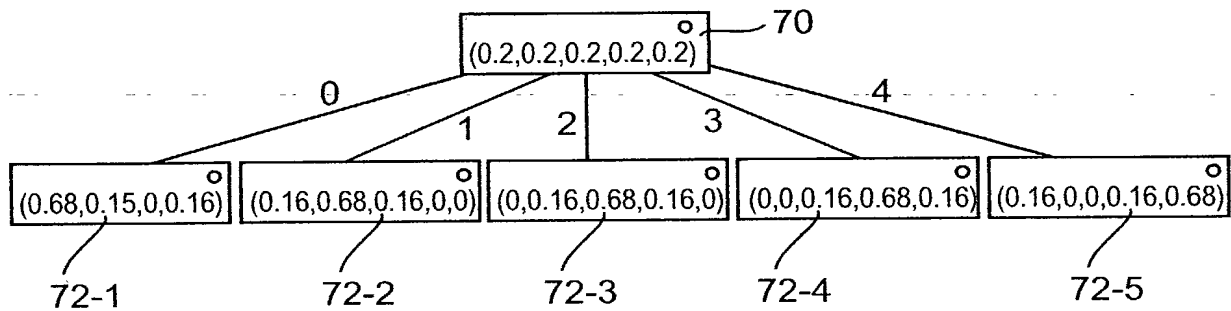


Fig. 13 The analytically derived singled-level context-tree

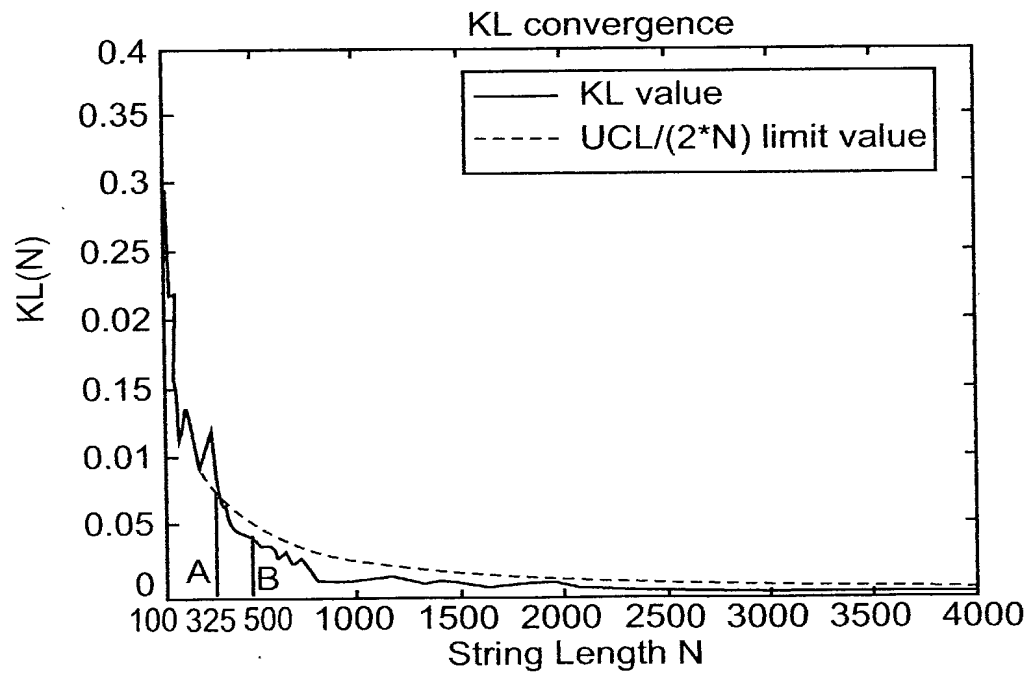


Fig. 14 KL value in relation to input string length N

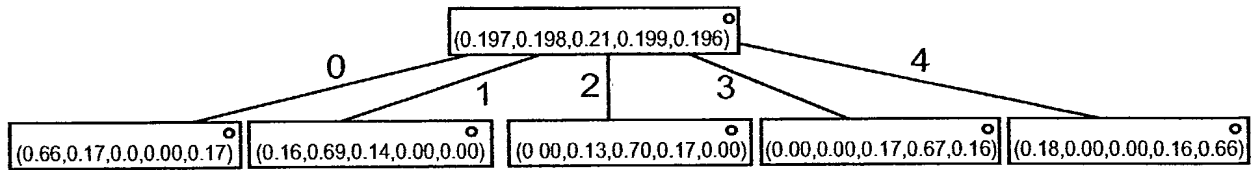


Fig. 15 Estimated reference context-tree resulted from the implementation of context algorithm to $N=1000$

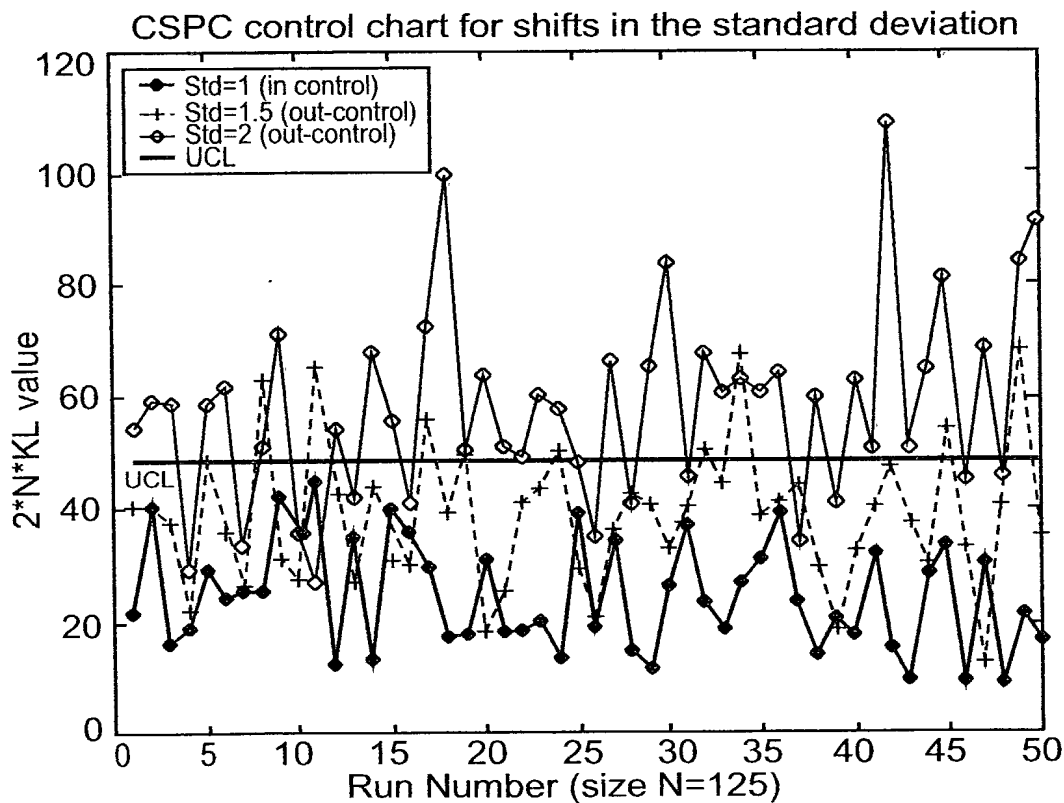


Fig. 16

Shifts in the process underlying normal standard deviation
 $\lambda=1, 1.5, 2$ (number of runs for each process properties is equal to 50)

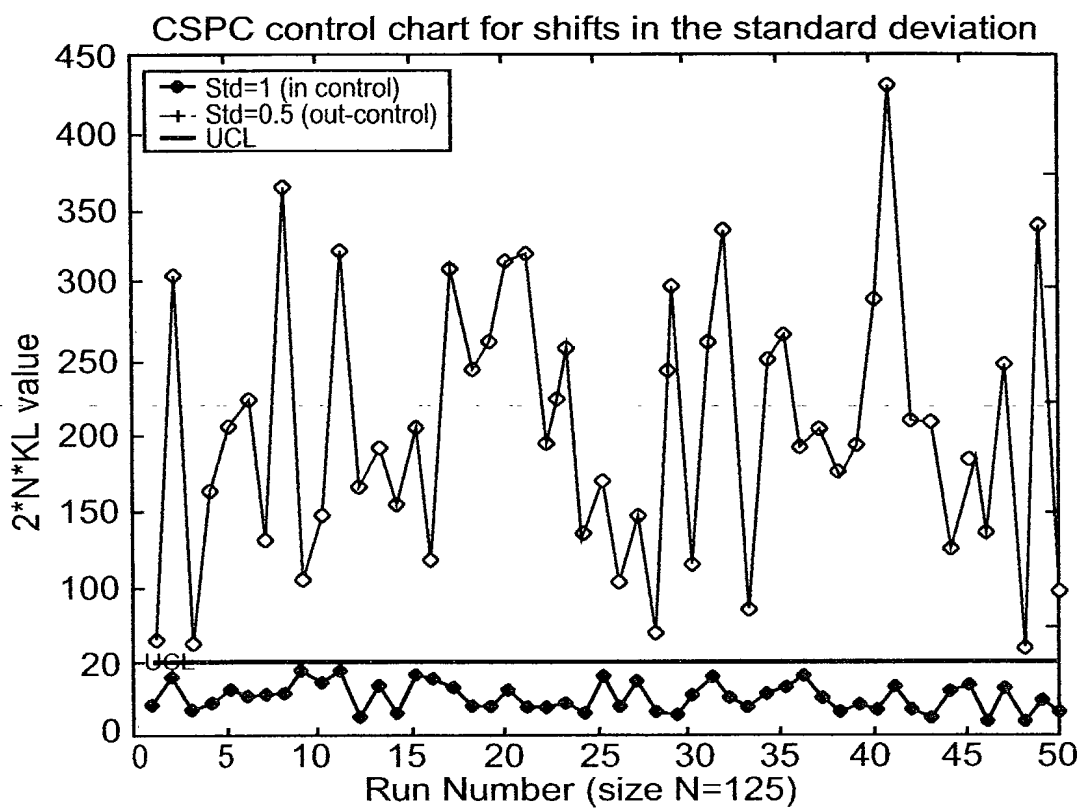


Fig. 17

Shift in the process underlying normal standard deviation
 $\lambda=0.5$ (number of runs equal to 50)

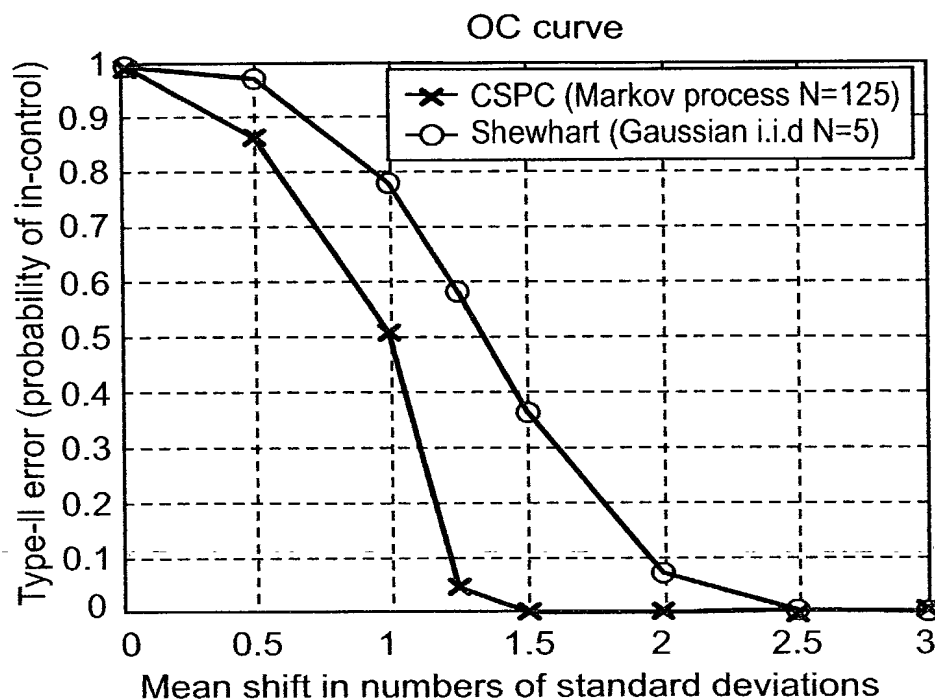


Fig. 18
Operating characteristics curve

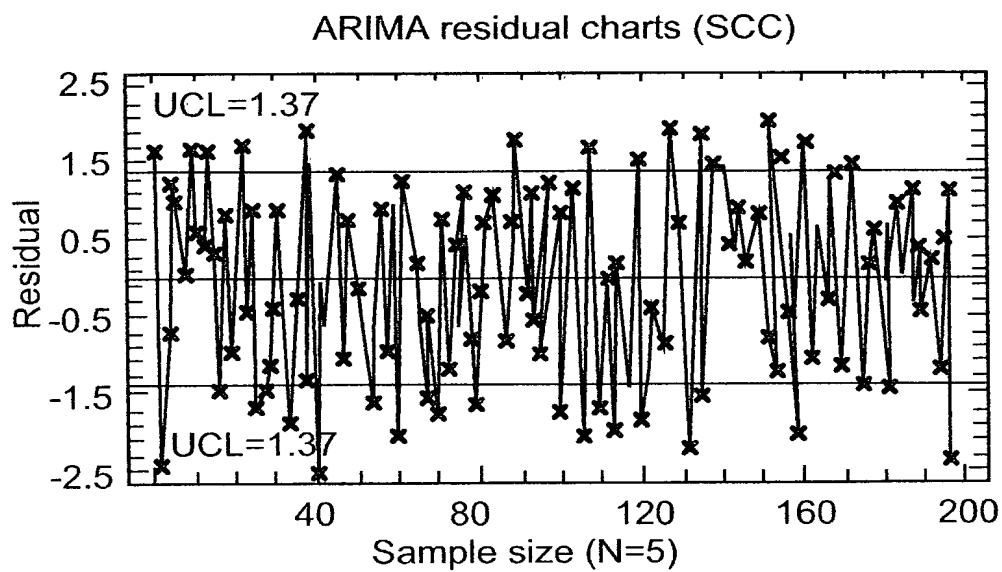


Fig. 19
The SCC control chart for "in-control" data

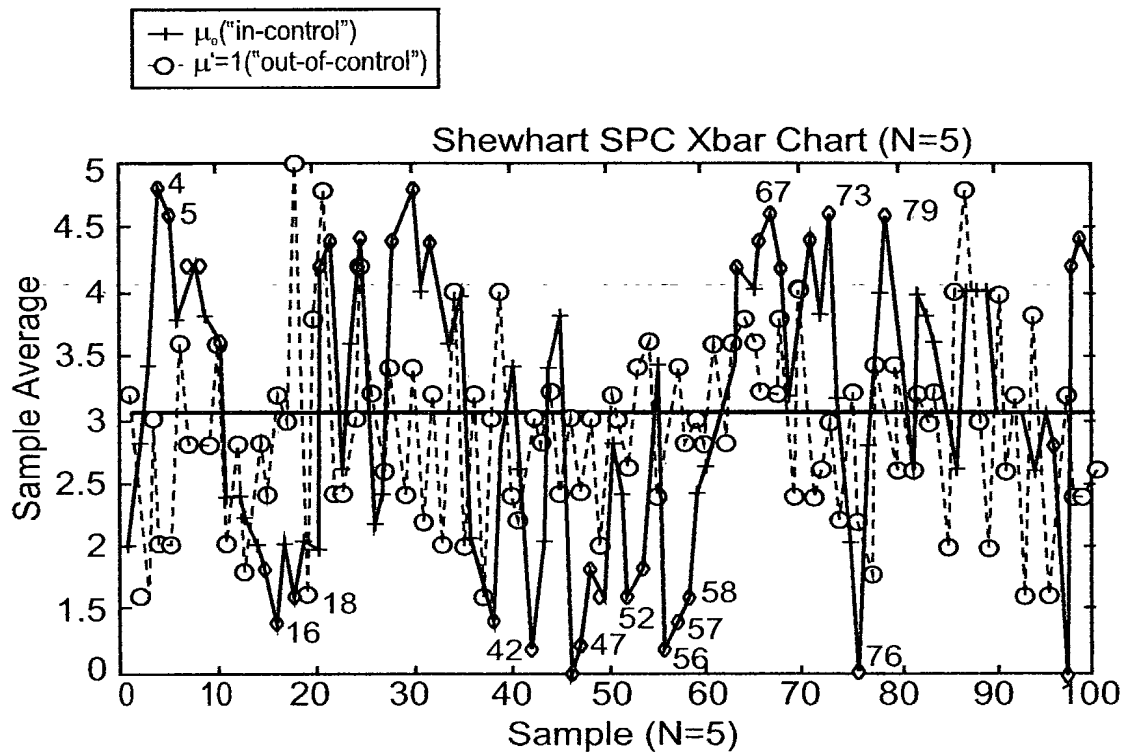


Fig. 20

Shewhart SPC \bar{X} chart—"in-control" data (solid line) and "out-of-control" data (dashed line)

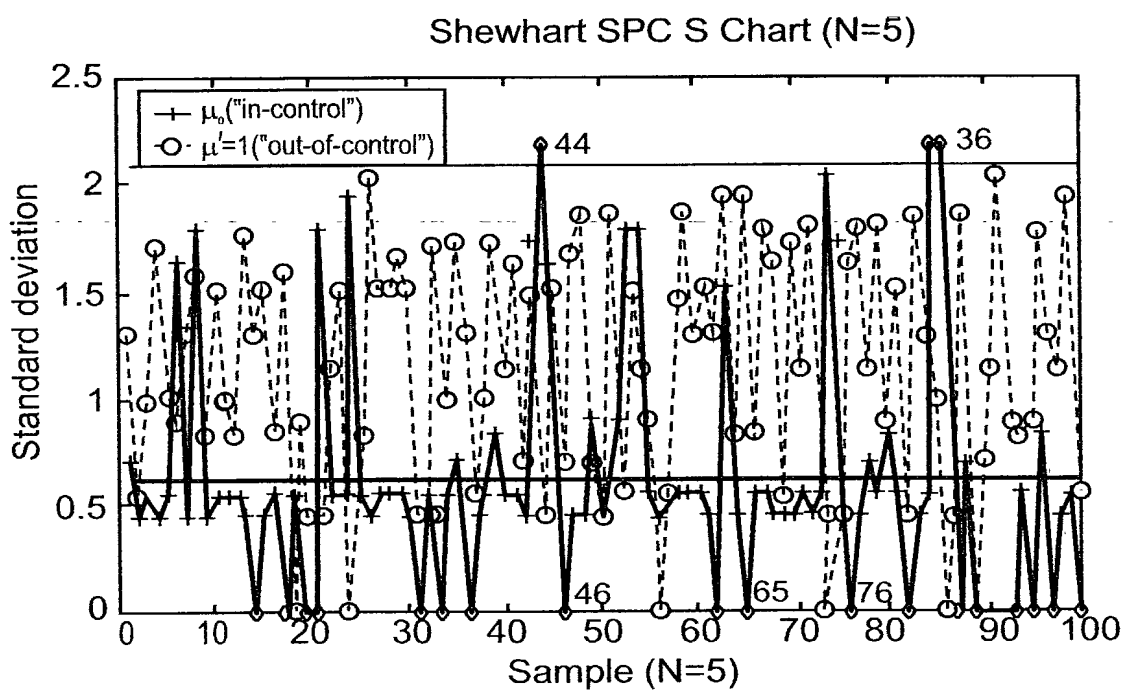


Fig. 21

Shewhart SPC S chart-"in-control" data (solid line) and "out-of-control" data (dashed line)

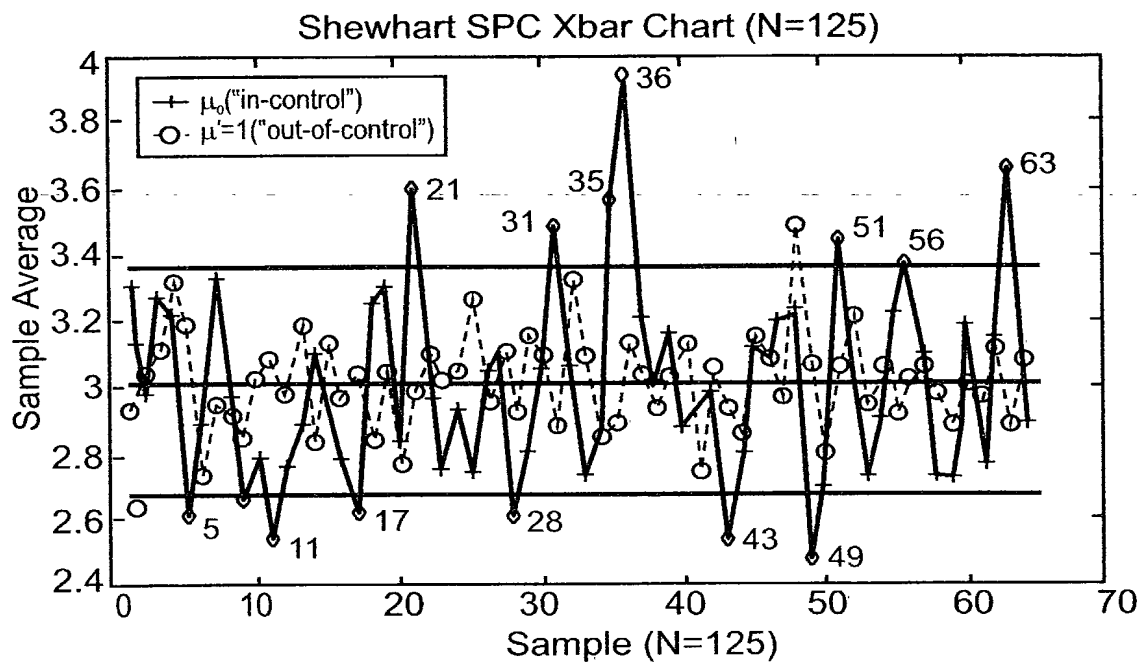


Fig. 22

Shewhart SPC \bar{X} chart for N=125 sample size - "in-control" data (solid line) and "out-of-control" data (dashed line)

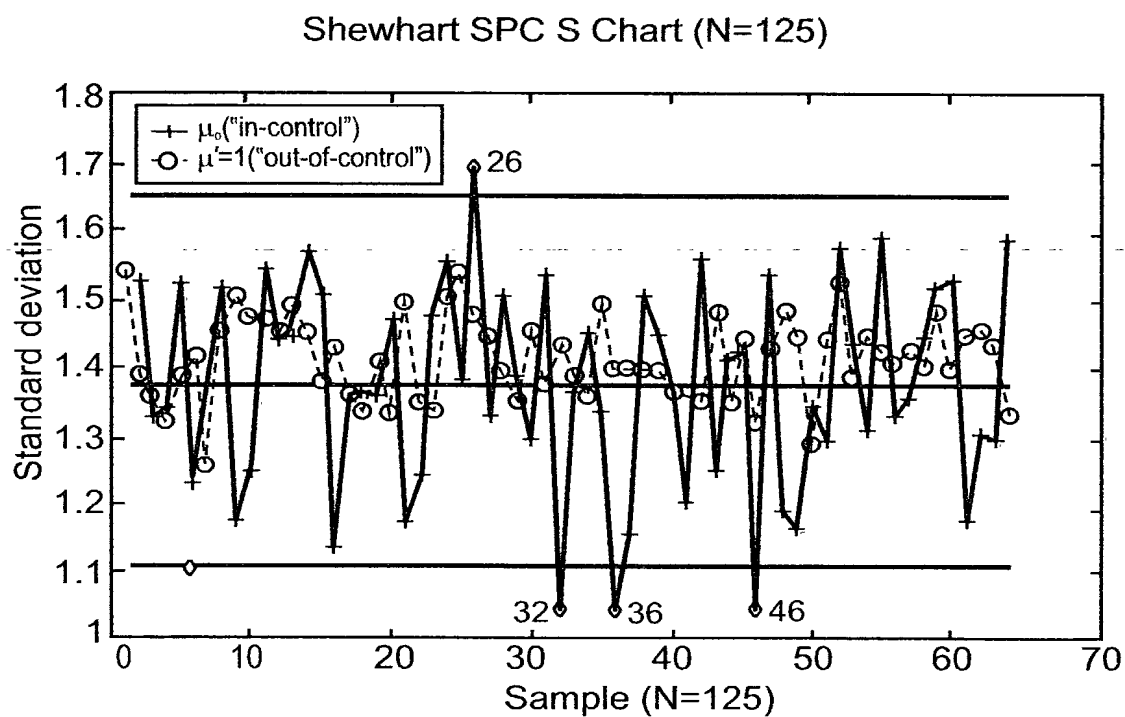


Fig. 23

Shewhart SPC S chart for N=125sample -"in-control" data (solid line) and "out-of-control" data (dashed line)